

Response dated January 11, 2007

In response to the Office Action of October 13, 2006

**AMENDMENT TO THE CLAIMS:**

This listing of claims will replace all prior listings of claims in the application:

**LISTING OF CLAIMS:**

1-234 were cancelled in an Amendment dated November 26, 2003.

235. (Currently Amended) A method for identifying a compound that putatively modulates or elicits human TIR2-associated taste in a human subject comprising:

(1) screening one or more compounds in a binding assay which identifies compounds that specifically bind to a human T1R2 polypeptide or which modulate (inhibit or enhance) the specific binding of another compound that specifically binds to said human T1R2 polypeptide wherein said T1R2 polypeptide is selected from the group consisting of:

(a) a human T1R2 polypeptide having the amino acid sequence encoded by SEQ. ID. SEQ. NO: 21;

(b) a human T1R2 polypeptide that is encoded by a nucleic acid sequence that specifically hybridizes to the hTIR2 nucleic acid sequence contained in SEQ. ID. NO: 20, under stringent hybridization conditions; which are with the further proviso that said T1R2 polypeptide specifically binds to at least one taste ligand which specifically binds to the human T1R2 polypeptide contained in SEQ ID NO:20; and

(c) a human T1R2 polypeptide which has an amino acid sequence that possesses at least 90% sequence identity to the amino acid sequence contained in SEQ. ID. NO: 21 or a functional fragment thereof;

Response dated January 11, 2007

In response to the Office Action of October 13, 2006

(d) a fragment is of human T1R2 polypeptide that is encoded by a nucleic acid sequence having SEQ. ID. NO:20 or a fragment comprising at least contiguous nucleotides of said sequence or a fragment of a T1R2 polypeptide according to (a) which is at least 25 amino acids in length;

(2) identifying a compound that putatively modulates or elicits human T1R2-associated taste based on its specific binding to a human T1R2 polypeptide according to (a), (b), or (c), or (d), or its modulation (inhibition or enhancement) of the specific binding of another compound to a T1R2 polypeptide according to (a), (b), or (c); or (d).

236. (Previously Presented) The method of claim 235, wherein the human T1R2 polypeptide has the amino acid sequence contained in SEQ. ID. NO: 21.

237. (Previously Presented) The method of claim 235, wherein the human T1R2 polypeptide possesses at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 21.

238. (Previously Presented) The method of claim 237, wherein the T1R2 polypeptide possesses at least 95% sequence identity to the polypeptide contained in SEQ. ID. NO: 21.

239. (Previously Presented) The method of claim 237, wherein the T1R2 polypeptide possesses at least 96% sequence identity to the polypeptide contained in SEQ. ID. NO: 21.

240. (Previously Presented) The method of claim 237, wherein the T1R2 polypeptide possesses at least 97% sequence identity to the polypeptide contained in SEQ. ID. NO: 21.

241. (Previously Presented) The method of claim 237, wherein the T1R2 polypeptide possesses at least 98% sequence identity to the polypeptide contained in SEQ. ID. NO: 21.

242. (Previously Presented) The method of claim 237, wherein the T1R2 polypeptide possesses at least 99% sequence identity to the polypeptide contained in SEQ. ID. NO: 21.

243. (Currently Amended) The method of claim 235, wherein the T1R2 polypeptide is encoded by a nucleic acid sequence that hybridizes to the nucleic acid sequence contained in SEQ. ID. NO: 20 or a fragment thereof which is at least 500 nucleotides under stringent hybridization according to said stringent hybridization conditions and encodes a T1R2 polypeptide which specifically binds to a taste ligand that specifically binds to the T1R2 taste receptor polypeptide contained in SEQ ID NO:21 conditions.

244. (Cancelled)

245. (Previously Presented) The method of claim 235, wherein said T1R2 polypeptide is attached to a solid phase.

Response dated January 11, 2007

In response to the Office Action of October 13, 2006

246. (Previously Presented) The method of claim 235, wherein said T1R2 polypeptide is in solution.

247. (Previously Presented) The method of claim 235, wherein said T1R2 polypeptide is in a lipid bilayer or vesicle.

248. (Previously Presented) The method of claim 235, wherein said T1R2 polypeptide is expressed by a cell.

249. (Previously Presented) The method of claim 235, wherein said T1R2 polypeptide is comprised on a cell membrane.

250. (Previously Presented) The method of claim 248, wherein the cell is a prokaryotic cell.

251. (Previously Presented) The method of claim 248, wherein the cell is a eukaryotic cell.

252. (Previously Presented) The method of claim 251, wherein said cell is a yeast, insect, amphibian or mammalian cell.

253. (Previously Presented) The method of claim 252, wherein the cell is a CHO, HEK-293, COS cell, or Xenopus oocyte.

254. (Previously Presented) The method of claims 235, wherein binding to the T1R2 polypeptide results in a detectable change in T1R2 polypeptide conformation.

255. (Previously Presented) The method of claim 254, wherein said change is detected by NMR spectroscopy.

Response dated January 11, 2007

In response to the Office Action of October 13, 2006

256. (Previously Presented) The method of claim 254, wherein said change is detected by fluorescence spectroscopy.

257. (Previously Presented) The method of claim 248, wherein said cell further expresses a G protein that couples to said TIR2 polypeptide.

258. (Previously Presented) The method of claim 257, wherein said G protein is Ga15 or Ga16 or gustducin.

259. (Previously Presented) The method of claim 235, wherein the binding assay includes the use of a label.

260. (Previously Presented) The method of claim 259, wherein said label is an enzyme, radionuclide, chemiluminescent compound or fluorescent compound.

261. (Previously Presented) The method of claim 237, wherein the binding assay detects displacement of a labeled ligand from said TIR2 polypeptide.

262. (Previously Presented) The method of claim 235, wherein said binding assay is a fluorescent polarization or FRET assay.

263. (Previously Presented) The method of claim 235, wherein binding of the compound to TIR2 polypeptide is detected by a competitive binding assay.

264. (Previously Presented) The method of claim 235, wherein the binding of the compound to said TIR2 polypeptide is detected by a non-competitive binding assay.

265. (Previously Presented) The method of claim 235, wherein the binding assay uses an intact or permeabilized cell that expresses said TIR2 polypeptide.

Response dated January 11, 2007

In response to the Office Action of October 13, 2006

266. (Currently Amended) The method of claims 235, wherein the binding assay detects release of a labeled compound from said TIR2 polypeptide.

267. (Previously Presented) The method of claim 235, wherein the binding assay detects binding based on a detectable change in fluorescence absorbance or refractive index.

268. (Previously Presented) The method of claim 235 which is a high throughput binding assay.

269. (Previously Presented) The method of claim 268 which screens a library of at least 1000 compounds.

270. (Previously Presented) The method of claim 269, wherein said library is a combinatorial chemical library.

271. (Previously Presented) The method of claim 235, which further includes step (3) whereby the effect of said putative taste modulating compound is evaluated in a human taste test.